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REDUCING CAMPGROUND CAPACITY TO MATCH ANTICIPATED DEMAND

BY

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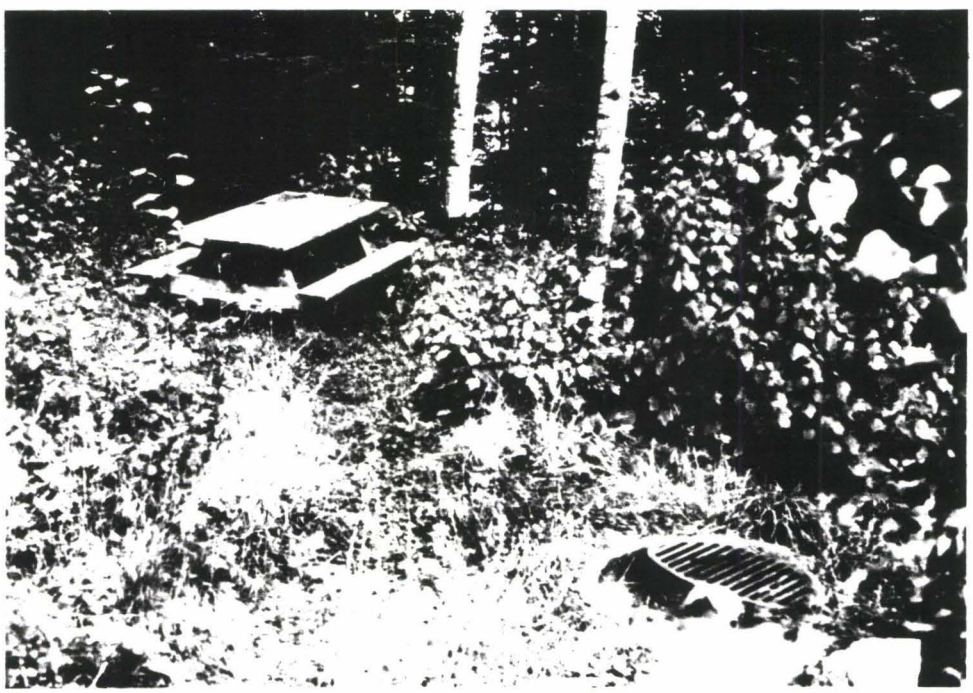

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ABSTRACT

As a part of the forest planning process, analysis was made of the projected demand (needs of the users) for a wide variety of recreation opportunities. For wilderness uses and dispersed activities, we found an increasing demand. Projections for developed site use, and camping in particular, showed a decline over the next 30 years and back up to 1980 levels in 2010.

In order to be more efficient in our use of people, time, and dollars for recreation management to meet these anticipated demands or trends, the forest plans to reduce the existing capacity of developed campgrounds and redirect our efforts and dollars saved to the dispersed and wilderness portions of the recreation budget to better meet the user's needs in the future.

This paper provides three methods of reducing campground capacity; shortening the managed season, reducing the number of sites available during the managed season, and closing entire campgrounds. A benefit/cost approach to decision making is offered for use in the campground closure method. This approach also systematically includes subjective criteria, such as public acceptability and substitute facilities, to set priorities for closure using factors other than a pure cost savings.

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I. INTRODUCTION

A. HISTORY AND BACKGROUND

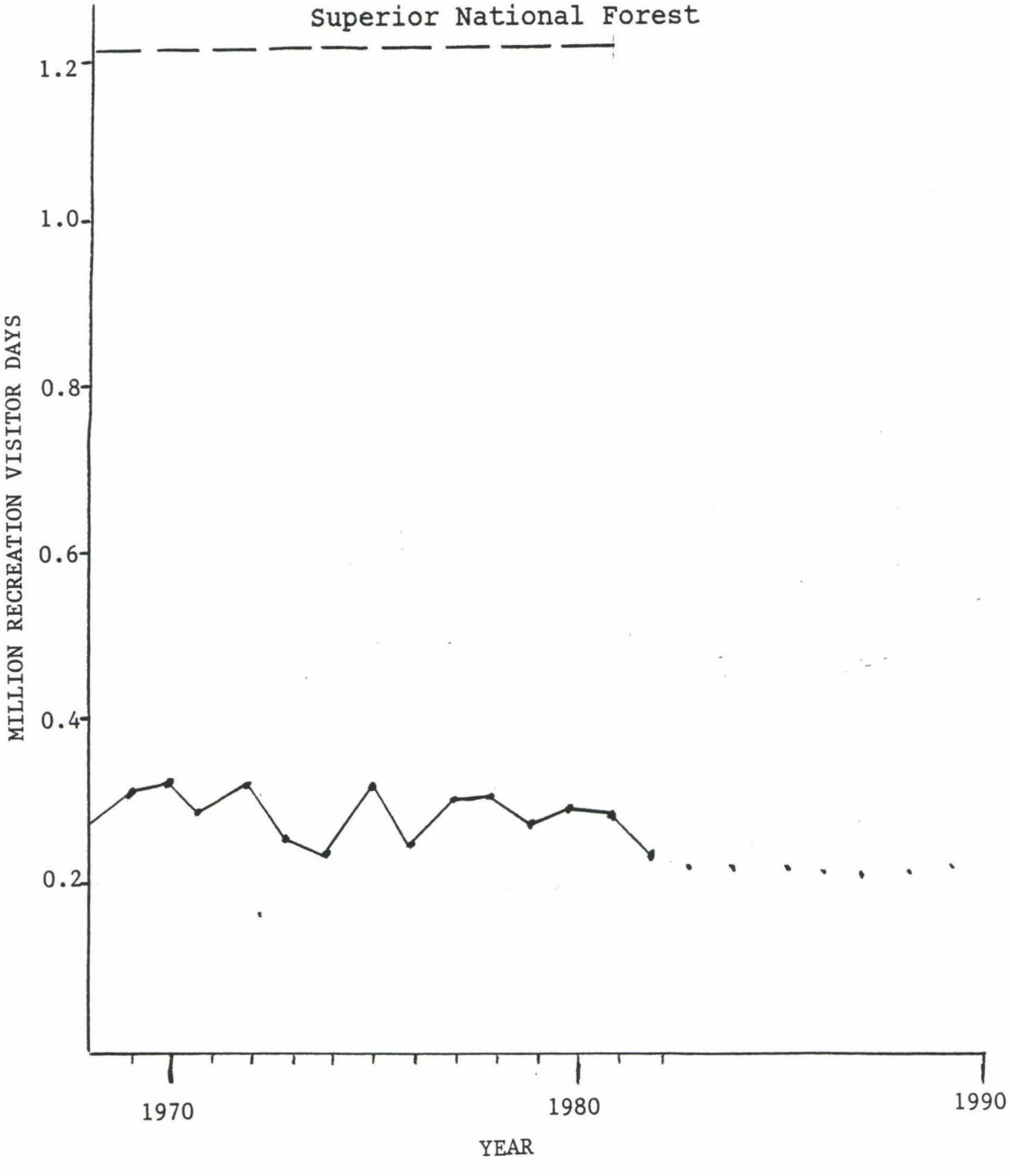
How many times have we sung the same old song "We just don't get enough money to maintain the facilities we've got?" True as it may be, perhaps it is time to approach the problem from another angle and sing a new song, "Do we really need all of the facilities we are trying to maintain to meet demand for camping?"

Over three-quarters of the existing campgrounds on the Superior National Forest were constructed after 1960. This flurry of construction activity, typical of other forests in the Lakes States at that time, was in part a response to the Outdoor Recreation Resources Review Commission's report in 1962 which painted a rosy picture of booming demand for developed camping facilities.

Following is a graph showing actual use of developed campgrounds on the Superior National Forest since 1968. Less than one quarter of the total capacity available during the managed season is being utilized.

DEVELOPED CAMPGROUND USE

Superior National Forest



B. WHY THE STUDY

As a part of the forest planning process, analysis was made of the projected demand (needs of the users) for a wide variety of recreation opportunities. For wilderness use and dispersed activities, there is an increasing demand. Projections for developed site use, and camping in particular, showed a decline over the next 30 years and back up to 1980 levels in 2010. The last three years' use for developed camping on the Forest substantiate this projection as shown in the following table:

TABLE 1 - Use in Developed Campgrounds
Superior National Forest

Fiscal Year	Visitor Days
1980	298,400
1981	279,600
1982	215,000

In addition, camping use for fiscal year 1983 is reported to be down about 15 to 20 percent so far this year.

Efficiency is defined as "the ratio of resulting useful work to the energy expended" (Webster 1971). When one thinks of all of the energy being expended making trips to these campgrounds during the managed season to collect fees, clean toilets, mow grass, enforce regulations, etc., and they are virtually vacant a large portion of the time, it appears

that a good deal of this energy expended is not resulting in useful work.

In order to be more efficient in our use of people, time, and dollars for recreation management to meet these anticipated demands or trends, the forest plans to reduce the existing capacity of developed campgrounds and redirect our efforts and dollars saved to the dispersed and wilderness portions of the recreation budget to better meet the user's needs in the future.

There is a sentence that appears on RIM printouts which reads, "Statistical sampling indicates the use of well managed sites fall between 20 and 40 percent of theoretical capacity."

Currently, the Forest as a whole is at 23 percent of theoretical capacity (see Appendix A). The proposed land and resource management plan for the Superior National Forest calls for reducing existing capacity to move closer to 40 percent theoretical capacity.

C. WHO WILL FIND THIS PAPER USEFUL

This paper is written primarily for assistant rangers in charge of recreation on the districts. It provides them with methods to make an analysis of their situation to see if efficiency can be improved. It will also be useful to members of the management team (rangers, staff, and forest supervisor) as background material in selecting priorities forestwide to achieve the desired theoretical capacity goal.

II. SCOPE OF STUDY

A. WHAT IT INCLUDES

This paper provides three methods of reducing campground capacity. They are:

1. Shorten the managed season
2. Reduce the number of sites available during the managed season
3. Close entire campgrounds

In the following chapters, the data needed, analysis procedures, and examples will be given for each of these methods. It will not give you answers to questions, but will offer a way to find the answers. Cost considerations in the economic analysis will be confined to existing methods of operation.

B. WHAT IT DOES NOT INCLUDE

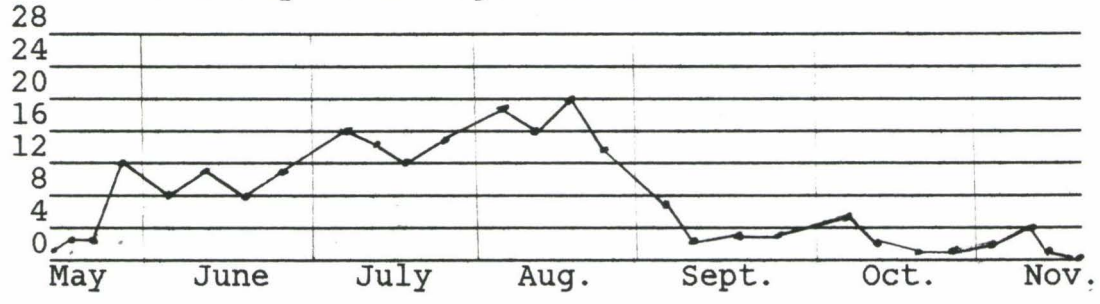
There are several goals one could discuss in regard to campground management such as increasing revenues, reducing costs by changing levels of service or operation, or operating campgrounds under permit to a concessionnaire.

None of these will be covered in the scope of this paper. These are issues which can be further studied from a pure cost-revenue economic analysis after capacity levels to match anticipated demand have been established.

III. SHORTEN THE MANAGED SEASON

The first step in this method of reducing capacity is to prepare a profile of use for each campground as shown in the following example:

Profile of Use For 28 Unit Campground - Current Managed Season is May 15 through October 15



As a start, fee collection envelopes are an excellent source for plotting this data. For each week, plot the maximum number of sites occupied. Then look at the results and, based upon experience, make any adjustments if the previous years data used is not quite typical for that campground.

Assuming the data in the example accurately represents typical use the managed season could be reduced to May 23 through August 31 or 100 days. Following would be the difference in reporting:

TABLE 2 - Changes in Capacity and Percent of Theoretical Capacity as a Result of Shortening The Managed Season

	# Sites	Capacity PAOT	Season Days	Theoret-ical Capacity PAOT Days	Theoret-ical Capacity Visitor Days	Visitor Days	Percent Theoret-ical Capacity
Typical Year	28	140	153	21,420	42,840	11,800	28
Coming Year	28	140	100	14,000	28,000	11,800	42

IV. REDUCE THE NUMBER OF SITES AVAILABLE DURING THE MANAGED SEASON

There are two ways of reducing the number of sites available during the managed season. One is to close sites for the entire season. Refer to the profile of use used in Chapter III. Note that eight of the twenty-eight sites were not needed at any time during the season. Again, if this accurately represents typical use, those eight sites could be closed for the entire season, and in effect, we would be changing this to a twenty-unit campground. The combination of reducing the managed season and closing eight sites would result in a larger capacity reduction and difference in percent of theoretical capaicty. Following would be the difference in reporting:

TABLE 3 - Changes in Capacity and Percent of Theoretical Capacity as a Result of Shortening The Managed Season and Reducing the Number of Sites

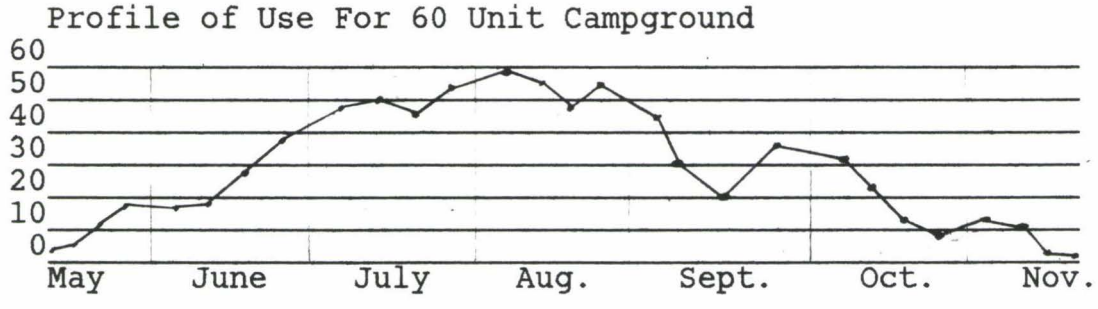
	# Sites	Capacity PAOT	Season Days	Theoret-ical Capacity PAOT Days	Theoret-ical Capacity Visitor Days	Visitor Days	Percent Theoret-ical Capacity
Typical Year	28	140	153	21,420	42,840	11,800	28
Coming Year	20	100	100	10,000	20,000	11,800	59

Another way to reduce the number of sites available during the managed season is to have some of the sites closed off

for part of the season. This works well in campgrounds designed in a number of loops.

Following is an example of a 60-unit campground with three loops of 20 units each. Currently, the 60 unit campground is listed open from 5/15 to 11/5 for 184 day managed season on a single RIM sheet.

Following is a profile of use for the 60-unit campground:



By opening up 20 unit loops only as needed during the season and preparing a RIM sheet for each loop, following is the result:

TABLE 4 - Changes in Capacity and Percent of Theoretical Capacity as a Result of Shortening The Managed Season and Reducing the Number of Sites

	# Sites	Capacity PAOT	Season Days	Theoretical Capacity PAOT Days	Theoretical Capacity Visitor Days	Visitor Days	Percent Theoretical Capacity
Loops Open All Year	60	100	184	55,200	110,400	24,400	22
Loop 1 (5/15-11/5)	20	100	184	18,400	36,800		
Loop 1 (6/15-10/15)	20	100	122	12,200	24,400		
Loop 3 (7/1-9/5)	20	100	66	6,600	13,200		
Total - All Loops	60	300	---	37,200	74,400	24,440	33

V. CLOSE ENTIRE CAMPGROUNDS

The third method for reducing capacity, closure of campgrounds, requires an analysis which takes into account a variety of criteria, is more subjective, and requires a broader look at demand for developed camping than single sites. The research branch of the Forest Service used this process to prioritize research projects for the 1985 RPA program (E.L. SHAFER, 1982). Applying this same process to prioritizing campground closures involves the use of a panel of "experts" who independently make comparisons in combinations of two for all of the candidate campgrounds for closure using the following four criteria on conditions which point to serious consideration for closure of a campground:

1. The actual and anticipated use as a percentage of theoretical capacity is less than 20 percent after reducing the managed season and/or reducing the number of sites available during the managed season.

2. Campgrounds with five sites and less where cost per RVD is high compared to well used areas and maintenance and operation duties required a considerable amount of travel time. Consideration should be given to managing these as a dispersed area for camping, closer to devel-

opment level 2 facilities with a pack it in/pack it out policy and just a few periodic checks during the year. Manage more for semi-primitive motorized experience.

3. Existing or planned developments providing a very similar type of experience are are located nearby. This is especially an important consideration if similar substitute faciltiies are managed by private individuals or other public agencies. For example, there are two resorts under special use permit which are currently proposing adding camping facilities to their business. The resort campground is now becoming a backbone of the camping industry (W.F. LaPage, August 1983).

4. Anticipated public reaction to closure is favorable or neutral. Users of the campground under consideration for closure have other similar areas to utilize and are not tied to a favorite spot.

In the following example, assume that five campgrounds on the Forest are candidates for possible closure. The panel of experts should consist of the assistant ranger in charge of recreation from each district, the recreation staff officer, and an individual from each area in which there is

a candidate campground for closure who is knowledgable of recreation use and can provide an "outside" opinion. Some examples may be county board members, resort owners, or managers of state campgrounds. Their involvement will give us a better perspective on criteria 3 and 4 as well as build their commitment to the decision by being involved in the process.

Each panel member will be given a letter describing the purpose, a map showing the location of the five campgrounds under consideration, a list of the criteria including the appropriate numbers for use as a percentage of theoretical capacity and cost per RVD for each campground (criteria 1 and 2), and a sheet for recording their choices. They will be asked to make their choices based upon closing the campground which will best maximize the social, economic, and managerial benefits.

Here is an example of a completed sheet. Note that 1 indicates the benefits of closing the campground listed in the column were judged to be more favorable than the benefits of closing the campground listed in the row. 0 indicates the benefits of closing the campground listed in the column were judged less favorable than the benefits of closing the campground listed in the row.

TABLE 5 - Record of Panel Members Choices

		COLUMN				
	Campground No. →	1	2	3	4	5
	1		1	1	0	0
	↓ 2			0	0	0
ROW	3				1	1
	4					1
	5					

Next summarize and tabulate the results from the panel members sheets. The product may look something like this:

TABLE 6 - Proportion of times benefits of closing campgrounds in the column was judged more favorable than the benefits for closing campgrounds in the rows.

Campground No.	1	2	3	4	5	Grand Total
1	.500	.618	.724	.434	.289	
2	.382	.500	.529	.184	.224	
3	.276	.460	.500	.184	.145	
4	.566	.816	.816	.500	.421	
5	.710	.776	.855	.579	.500	
Column Totals	2.434	3.170	3.434	1.881	1.570	12.498
Percentage (Column Total)/(Grand Total)	.195	.254	.275	.150	.126	1.000

In this case, results of the survey of the panel of experts would rank priority for closure as follows:

Close first	Campground	3
	"	2
	"	1
	"	4
Close last	"	5

These results are based primarily on managerial and social benefits for closure. The economic benefits or cost savings needs to be examined by the management team prior to making the final decision. Economic analysis will be covered in the following chapter.

As a final step, the Forest Supervisor and District Rangers should review the results, check on rationale for individual choices, review the cost savings for each closure, and make adjustments if necessary, and approve the final prioritized list since they will be ultimately responsible for implementation of the closures.

Their decision should include a time table for implementation. For example, if after shortening the managed season and reducing the number of sites available during the managed season raised the overall Forest campground anticipated percent of theoretical capacity use from 23 to 35 percent and a goal of 40 percent was set, it may take closing only the first two campgrounds to reach the 40 percent goal. The

next three campgrounds on the list could then be held in reserve pending budget cuts which may force further reduction in capacity.

VI. ECONOMIC ANALYSIS

As mentioned in Chapter II, cost considerations will be confined to existing methods of operation. For all three methods of reducing capacity, the end product will be a cost savings, or an amount that can be better utilized to finance dispersed recreation and wilderness activities.

From the pure cost savings standpoint, the largest savings can be made by closing entire campgrounds and the least from reducing the number of sites available during the managed season.

Following are cost considerations for each method:

A. Shorten the Managed Season - Cost savings would be a total of the following:

1. Salaries of recreation personnel who would have been working at these campgrounds during the longer season.

2. Fewer trips for garbage contract.

3. Less vehicle mileage

4. Less cost for trips by local law enforcement officers under a cooperative law enforcement agreement.

Costs for maintenance of facilities would not change since the number of sites would not change.

B. Reduce the number of sites available during the managed season. Refer to the first example in Chapter IV where the number of sites was reduced from 28 to 20.

A quick simplistic approach would be to use the national average figure of $315/site/year as a cost of maintaining and operating campground sites (John Crowell 1982) and multiply by eight. This would mean a $2520 cost savings. A more realistic approach, however, would be to figure the cost savings as follows:

Compare the total costs of operation and maintenance with 28 sites to the total costs of operation and maintenance with 20 sites. The difference would be the cost saved.

Savings would result from eight less sites to maintain (grounds and facilities) plus the added benefit of having facilities for eight sites on hand to use for replacement when others wear out. The only cost would be to remove facilities and close off the sites.

In the second example in Chapter IV with the three 20 unit loops, following would be cost saved; cost of time to check all loops for fee compliance plus cost of maintaining grounds and cleaning facilities for those loops closed for a period of time. This would amount to the least amount of savings of the three methods.

C. Close entire campgrounds.

Cost saved would be the total annual cost of operating and maintaining the campground (not including district overhead, of course) minus the cost of closing it to use. The more years the campground remains closed, the better the cost savings, because closure is a one time cost and operation and maintenance savings increases each year the campground remains closed.

In the case of converting an existing developed campground to a dispersed area for camping, there is the benefit of maintaining management flexibility to reopen the area to developed camping at a low investment cost should demand change in future years. Regardless of method of closure, this option offers the best opportunity for the largest cost savings.

VII. CONCLUSION

It is recommended that all three methods of reducing capacity be explored in order to provide the management team enough information to make a good decision on how to achieve the percent of theoretical capacity goal established in the Forest plan. Every forest is now going through the land management planning process and will have the anticipated demand figure available. This paper may be useful to those forests who find their position similar to the Superior, with a current and anticipated continued oversupply of developed camping capacity.

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APPENDIX A

DATA FROM RIM PRINTOUTS AS OF 11/29/82 (2300-1A)
SUPERIOR NATIONAL FOREST

District	Name-Family Campground	# Sites	Capacity PAOT	Managed Season Days	Theoretical Capacity PAOT Days	Theoretical Capacity Visitor Days	Reported Use Visitor Days	Percent of Theoretical Capacity
AURORA	Whiteface Reservoir	58	290	124	35960	71920	26500	37
	Cadotte Lake	27	135	124	16740	33480	11800	32
GUNFLINT	Trails End	36	180	124	22320	44640	15300	34
	Kimball Lake	7	35	107	3745	7490	2900	39
	Flour Lake	46	230	107	24610	49220	10000	20
	Iron Lake	7	35	107	3745	7490	3000	40
	Devil Track Lake	19	95	107	10165	20330	6500	32
	East Bearskin Lake	47	235	107	25145	50290	6200	12
	- Cascade River	3	15	107	1605	3210	1100	34
	Two Island Lake	39	195	139	27105	54210	7000	13
ISABELLA	Isabella River	11	55	171	9405	18810	2300	12
	- Divide Lake	2	10	365	5475	10950	2300	21
	McDougal Lake	21	105	365	38325	76650	6100	8
KAWISHIWI	Fenske Lake	16	80	139	11120	22240	5300	24
	Fall Lake	69	345	139	47955	95910	19600	20
	South Kawishiwi River	32	160	139	22240	44480	8700	20
	Birch Lake	16	80	139	11120	22240	8000	36
LACROIX	Echo Lake	26	130	144	18720	37440	13300	36
	Lake Jeannette	9	45	144	6480	12960	9200	71
TOFTE	Sawbill Lake	50	250	175	43750	87500	18800	21
	- Poplar River	4	20	175	3500	7000	1800	26
	Temperance River	9	45	175	7875	15750	3200	20
	- Kawishiwi Lake	5	25	175	4375	8750	2100	24
	- Baker Lake	5	25	175	4375	8750	1100	13
	Crescent Lake	35	175	175	30625	61250	9500	16
	Ninemile Lake	24	120	175	21000	42000	5000	12
	- Clara Lake	2	10	175	1750	3500	700	20
VIRGINIA	Pfeiffer Lake	21	105	153	16065	32130	7700	24
	FOREST TOTALS & AVERAGES	646	3230	159	475295	950590	215000	23

APPENDIX B - List of Illustrations

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